

# SCIENCE & EDUCATION Impact

Benefits from USDA/Land-Grant Partnership

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## More Money

Adding value to new and old agricultural products makes more than cents.

*When hog prices plummet and crop prices feel the crunch, opportunities to add value are, well, valued. The edge in agricultural profits comes from American technology's ability to find the silver lining. The USDA/Land-Grant partnership continually looks for ways to turn trash into treasure and the familiar into a new fortune.*

### Payoff

- **Sweet profits.** Corn fiber, a byproduct of the corn milling industry, can be converted into Xylitol, a sugar alcohol sweetener with unique and valuable properties. Xylitol, which helps prevent tooth decay and ear infections in children and acts as a safe food sweetener for diabetics, could raise the value of corn fiber from five cents per pound to nearly \$2. **Virginia Tech** scientists get the credit.
- **Alternative agriculture.** Butanol, currently made from petroleum, has uses that range from plastic production to brake fluids, but it's hard to use in food flavorings because it contains chemical impurities. **Illinois** scientists have created genetically modified bacteria that can produce butanol from corn. More than 136 million bushels of corn could be needed if the renewable resource version of butanol captures the hydrocarbon-based butanol market.
- **Nature factory.** **Florida** researchers have developed a breakthrough biotech bug that's become the basis for a new ethanol plant in **Louisiana**. The \$90 million factory will use the patented, genetically modified bacteria to break down plant waste into ethanol, an important industrial chemical and natural fuel. The factory will use the leftover plant material from corn and other crops to produce ethanol, reserving the grain for animal and human food uses.
- **Oil spoilers.** A canola-based motor oil works just as well as the petroleum version, but without the environmental drawbacks. Developed by a **Colorado State** alternative crop specialist, the motor oil is about the same weight as 10w-30, cuts hydrocarbon emissions by a third and disposal is worry-free. The motor oil will be produced by a farmer-owned plant in **Michigan** that was started with help from the

RESEARCH,  
EXTENSION AND  
EDUCATION  
AT WORK

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Extension Service. **Delaware** scientists have developed a new soybean-based hydraulic fluid that out-performs most other vegetable-based fluids.

- **Pet projects.** An **Arizona** meat scientist has found meat byproducts from cattle, swine and ostrich make perfect pet treats. Unfit for human consumption, the one-time waste products wow cats and dogs, and add \$40 to \$50 to the value of the source animal. Lean ostrich meat also can become a lucrative food product for overweight dogs.
- **Trash tree to cash tree.** Mesquite may become more than barbecue fodder now that **Texas A&M** scientists have found the springy wood makes a great platform for weight lifting. The National Football League is interested in products made from the nuisance brush, and there may be a market for flooring, cabinets and other home products. **Clemson** researchers have developed laminated bamboo panels and beams that meet specifications for home construction and furniture manufacturing. Not only is it stronger than traditional pine lumber products, bamboo can be harvested in five years rather than 20 to 25 years.
- **Bean there.** Processors pay premiums for food-grade soybeans, but they can't be handled just like any old bean. **Wisconsin** Extension helped food-grade soybean producers in one area earn an extra \$30,000 over two years by improving their harvest and postharvest management skills. A local grain company added five new jobs to handle the new niche market, and producers estimate they'll earn \$8 million in premiums by 2004.
- **Cherry burgers.** Mixing tart cherries with ground beef means lower fat and less carcinogenic charring from the cooked meat. The **Michigan State** research is part of ongoing work to improve public health by mixing meat with fruits and vegetables. Cherry burgers are now on school menus in 16 states.

- **More milk money.** University of Wisconsin researchers have found that feeding heat-treated soybeans to dairy cattle earns \$2 more per bushel because more of the protein gets to the cow, which gives more milk. **Wisconsin** dairies now can raise and process their own feed supplement—a \$20 million value.
- **Flower power.** That orchid corsage from the high school prom will cost less but earn growers more as **Texas A&M** scientists make the popular flowers grow quicker and bloom longer. The only program of its kind in the country, the research helped increase income of the potted orchid industry by \$20 million in 1997 and producers predicted a 30 percent increase in 1998 production.
- **Making hay.** Weed-free forage is a requirement for people who want to go horseback riding in Western wilderness areas. A **Utah** Extension agent is helping producers earn an additional \$30 per ton when they certify their hay won't spread noxious weeds on natural ecosystems.



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